Full wwPDB X-ray Structure Validation Report (i)

Jan 20, 2024 – 11:49 pm GMT

PDB ID	:	7NIM
Title	:	X-ray crystal structure of LsAA9A - cinnamon extract soak
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Deposited on	:	2021-02-12
Resolution	:	1.45 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references (i)) were used in the production of this report:

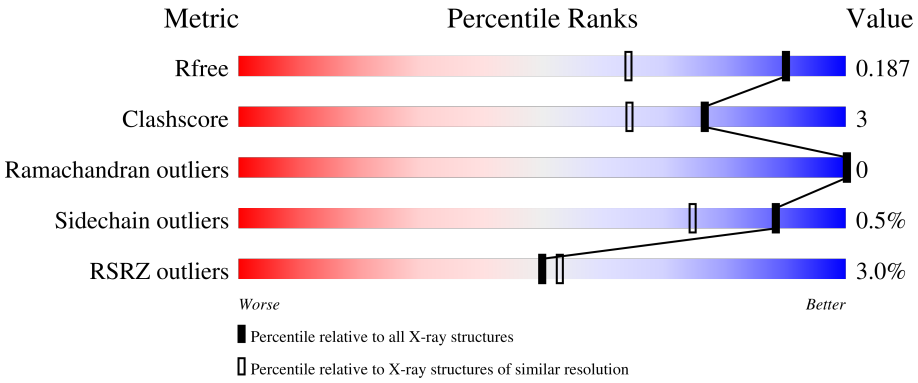
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 1.45 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1156 (1.46-1.46)
Clashscore	141614	1202 (1.46-1.46)
Ramachandran outliers	138981	1178 (1.46-1.46)
Sidechain outliers	138945	1178 (1.46-1.46)
RSRZ outliers	127900	1139 (1.46-1.46)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	235	3% 93% 7%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	ACT	A	303	-	X	-	-

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 2375 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

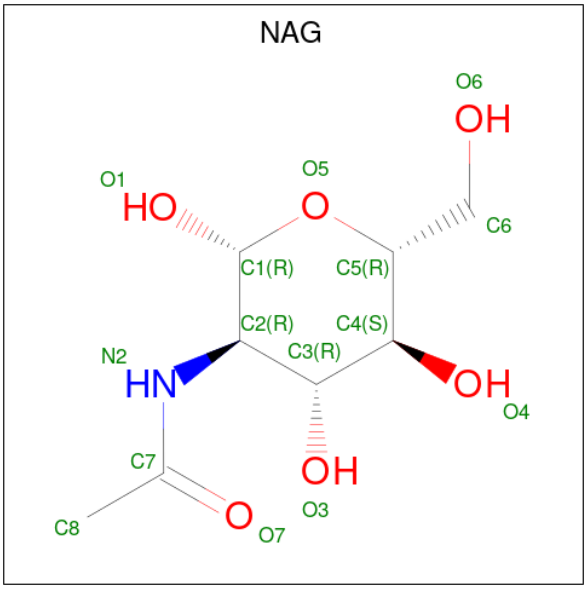
- Molecule 1 is a protein called Auxiliary activity 9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	235	1831	1163	310	355	3	0	7	0

- Molecule 2 is COPPER (II) ION (three-letter code: CU) (formula: Cu).

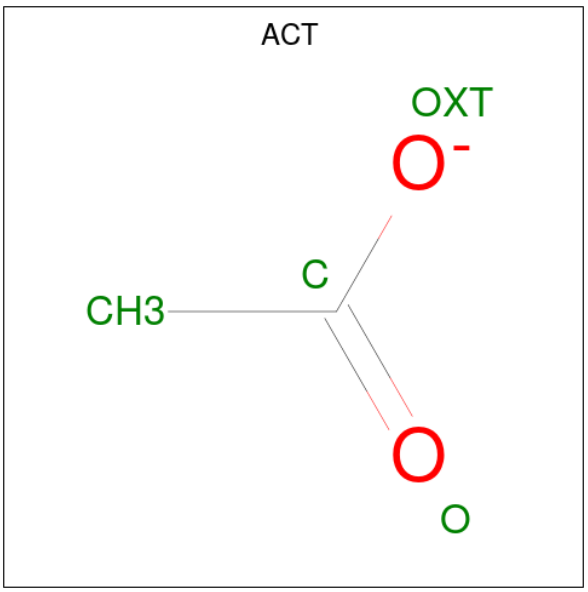
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Cu		
2	A	1	1	1	0	0

- Molecule 3 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



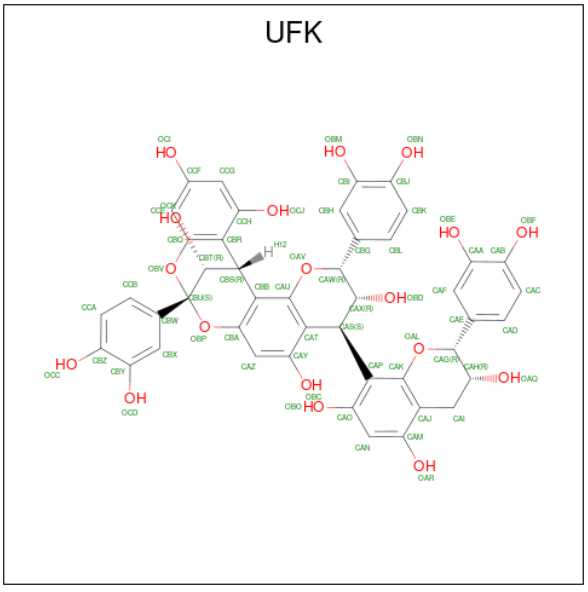
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
3	A	1	14	8	1	5	0	0

- Molecule 4 is ACETATE ION (three-letter code: ACT) (formula: $C_2H_3O_2$).



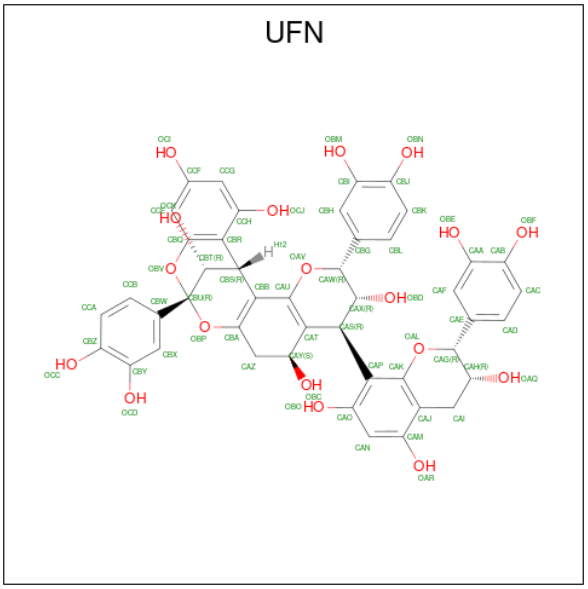
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
4	A	1	4	2	2	0	0

- Molecule 5 is Cinnamtannin B1 (three-letter code: UFK) (formula: $C_{45}H_{36}O_{18}$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
5	A	1	63	45	18	0	1

- Molecule 6 is Modified form of Cinnamtannin B1 with sp3 hybridized C5' (three-letter code: UFN) (formula: $C_{45}H_{38}O_{18}$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	1	Total C O 63 45 18	0	0

- Molecule 7 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	4	Total Cl 4 4	0	1

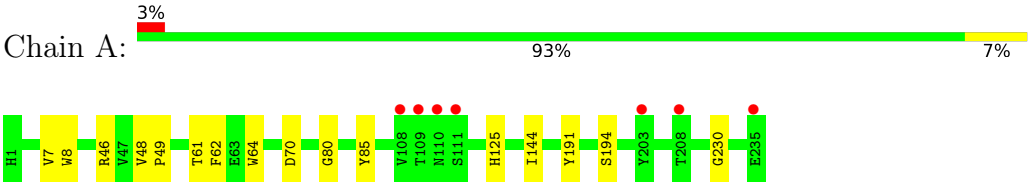
- Molecule 8 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	378	Total O 395 395	0	22

3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: Auxiliary activity 9



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 41 3 2	Depositor
Cell constants a, b, c, α, β, γ	125.18Å 125.18Å 125.18Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	44.30 – 1.45 44.26 – 1.45	Depositor EDS
% Data completeness (in resolution range)	100.0 (44.30-1.45) 100.0 (44.26-1.45)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.11 (at 1.45Å)	Xtriage
Refinement program	REFMAC 5.8.0267	Depositor
R, R_{free}	0.167 , 0.187 0.170 , 0.187	Depositor DCC
R_{free} test set	3009 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å^2)	21.5	Xtriage
Anisotropy	0.000	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.38 , 47.5	EDS
L-test for twinning[2]	$< \|L\| > = 0.52$, $< L^2 > = 0.36$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.97	EDS
Total number of atoms	2375	wwPDB-VP
Average B, all atoms (Å^2)	23.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.97% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: CL, CU, NAG, ACT, HIC, UFK, UFN

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	A	0.76	0/1892	0.93	3/2607 (0.1%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	85	TYR	CB-CG-CD2	-6.06	117.37	121.00
1	A	191	TYR	CB-CG-CD1	5.71	124.42	121.00
1	A	85	TYR	CB-CG-CD1	5.09	124.05	121.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1831	0	1735	11	0
2	A	1	0	0	0	0
3	A	14	0	13	0	0
4	A	4	0	3	0	0
5	A	63	0	0	0	0
6	A	63	0	0	0	0
7	A	4	0	0	0	0
8	A	395	0	0	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	2375	0	1751	11	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 3.

All (11) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:62[B]:PHE:HE2	8:A:565:HOH:O	1.41	1.02
1:A:64:TRP:HE1	1:A:125:HIS:HE1	1.27	0.83
1:A:64:TRP:HE1	1:A:125:HIS:CE1	2.08	0.71
1:A:70:ASP:OD2	8:A:402[A]:HOH:O	2.13	0.66
1:A:194:SER:OG	8:A:401:HOH:O	2.11	0.63
1:A:62[B]:PHE:CE2	8:A:565:HOH:O	2.28	0.59
1:A:125:HIS:HD2	8:A:503:HOH:O	1.91	0.54
1:A:80:GLY:HA3	1:A:144:ILE:O	2.17	0.44
1:A:8:TRP:CZ3	1:A:230:GLY:HA3	2.54	0.43
1:A:48:VAL:HB	1:A:49:PRO:HD2	2.03	0.41
1:A:7:VAL:HA	1:A:61:THR:O	2.20	0.41

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	240/235 (102%)	226 (94%)	14 (6%)	0	100 100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	201/194 (104%)	200 (100%)	1 (0%)	88 75

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	46	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	125	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains

1 non-standard protein/DNA/RNA residue is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
1	HIC	A	1	2,1	8,11,12	0.74	0	6,14,16	0.81	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral

centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	HIC	A	1	2,1	-	0/5/6/8	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 9 ligands modelled in this entry, 5 are monoatomic - leaving 4 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
6	UFN	A	305	-	67,72,72	2.57	19 (28%)	83,114,114	1.93	21 (25%)
4	ACT	A	303	-	3,3,3	2.26	3 (100%)	3,3,3	0.37	0
5	UFK	A	304[A]	-	71,72,72	2.34	17 (23%)	94,114,114	1.42	18 (19%)
3	NAG	A	302	1	14,14,15	0.69	0	17,19,21	1.72	4 (23%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	UFN	A	305	-	-	0/14/94/94	0/11/10/10
5	UFK	A	304[A]	-	-	2/14/74/74	0/11/10/10
3	NAG	A	302	1	-	0/6/23/26	0/1/1/1

All (39) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	305	UFN	CAZ-CBA	-9.07	1.37	1.49
5	A	304[A]	UFK	CBU-CBW	-8.62	1.40	1.51
6	A	305	UFN	CAP-CAS	-7.99	1.44	1.52
5	A	304[A]	UFK	CAI-CAJ	-7.49	1.39	1.51
5	A	304[A]	UFK	CAP-CAS	-6.26	1.46	1.53
6	A	305	UFN	CBG-CAW	-6.17	1.40	1.51
5	A	304[A]	UFK	CAE-CAG	-6.16	1.40	1.51
6	A	305	UFN	CBS-CBB	-6.13	1.44	1.51
5	A	304[A]	UFK	CBB-CBS	-5.73	1.43	1.52
5	A	304[A]	UFK	CBG-CAW	-5.23	1.42	1.51
6	A	305	UFN	CAE-CAG	-5.15	1.42	1.51
6	A	305	UFN	CAI-CAH	-4.82	1.45	1.52
6	A	305	UFN	CAH-CAG	4.66	1.60	1.52
5	A	304[A]	UFK	CAT-CAS	-4.44	1.45	1.52
6	A	305	UFN	CBB-CBA	4.31	1.40	1.34
6	A	305	UFN	CBR-CBS	-3.71	1.46	1.51
6	A	305	UFN	OCK-CBT	3.54	1.49	1.42
5	A	304[A]	UFK	CBR-CBS	-3.51	1.46	1.52
6	A	305	UFN	CBU-CBW	-3.39	1.47	1.51
5	A	304[A]	UFK	CBX-CBY	3.29	1.43	1.38
6	A	305	UFN	CAI-CAJ	-2.91	1.46	1.51
5	A	304[A]	UFK	CBT-CBS	-2.88	1.50	1.55
6	A	305	UFN	CBX-CBW	2.63	1.43	1.39
6	A	305	UFN	OAV-CAU	2.55	1.41	1.36
6	A	305	UFN	CCB-CCA	2.53	1.43	1.38
5	A	304[A]	UFK	OAV-CAW	2.51	1.49	1.45
6	A	305	UFN	CBX-CBY	2.38	1.42	1.38
4	A	303	ACT	OXT-C	-2.35	1.19	1.30
6	A	305	UFN	CAK-CAJ	2.34	1.43	1.39
5	A	304[A]	UFK	OBD-CAX	2.34	1.48	1.43
5	A	304[A]	UFK	CBH-CBG	2.30	1.42	1.39
5	A	304[A]	UFK	OAQ-CAH	-2.29	1.38	1.43
4	A	303	ACT	O-C	2.27	1.32	1.22
5	A	304[A]	UFK	CAY-CAT	2.24	1.43	1.40
6	A	305	UFN	CCG-CCH	2.21	1.42	1.38
6	A	305	UFN	CCB-CBW	2.20	1.42	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	304[A]	UFK	CBL-CBK	2.16	1.42	1.38
4	A	303	ACT	CH3-C	2.16	1.58	1.49
5	A	304[A]	UFK	CAH-CAG	-2.04	1.49	1.52

All (43) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	A	305	UFN	CBS-CBB-CAU	6.29	123.84	117.78
6	A	305	UFN	CBX-CBY-CBZ	5.01	124.30	119.86
5	A	304[A]	UFK	CBY-CBX-CBW	-4.90	115.25	120.76
6	A	305	UFN	CAI-CAH-CAG	4.49	115.11	109.09
6	A	305	UFN	OBP-CBA-CBB	-4.03	120.21	123.69
6	A	305	UFN	OCD-CBY-CBZ	-3.97	107.86	118.45
6	A	305	UFN	OAV-CAW-CAX	3.73	117.96	110.26
6	A	305	UFN	CCB-CCA-CBZ	-3.53	116.87	120.50
3	A	302	NAG	O5-C5-C4	-3.49	102.33	110.83
6	A	305	UFN	CAC-CAD-CAE	3.47	124.69	121.20
6	A	305	UFN	CBY-CBX-CBW	-3.45	116.89	120.76
5	A	304[A]	UFK	CBH-CBG-CAW	3.26	126.70	119.83
5	A	304[A]	UFK	CBB-CBS-CBR	3.24	115.17	110.14
6	A	305	UFN	CAF-CAA-CAB	3.16	122.65	119.86
6	A	305	UFN	CAD-CAC-CAB	-3.14	117.28	120.50
3	A	302	NAG	O5-C1-C2	-3.09	106.41	111.29
6	A	305	UFN	OCD-CBY-CBX	3.08	127.72	119.46
5	A	304[A]	UFK	CBX-CBY-CBZ	3.05	122.56	119.86
5	A	304[A]	UFK	OAQ-CAH-CAG	-2.74	105.16	110.32
6	A	305	UFN	CAD-CAE-CAF	-2.70	115.65	118.76
5	A	304[A]	UFK	CBL-CBG-CAW	-2.70	115.61	120.64
5	A	304[A]	UFK	CAI-CAH-CAG	2.69	112.70	109.09
3	A	302	NAG	O5-C5-C6	2.58	111.25	107.20
6	A	305	UFN	CBR-CBS-CBB	2.57	113.08	110.28
6	A	305	UFN	CBU-OBV-CBQ	2.51	122.77	116.62
5	A	304[A]	UFK	OBP-CBA-CBB	-2.47	118.14	122.00
5	A	304[A]	UFK	OBP-CBA-CAZ	2.46	120.33	116.42
6	A	305	UFN	CBH-CBG-CAW	-2.38	114.81	119.83
5	A	304[A]	UFK	CCB-CBW-CBX	2.38	122.34	117.76
6	A	305	UFN	OCC-CBZ-CCA	2.35	125.71	119.33
5	A	304[A]	UFK	OBN-CBJ-CBK	2.24	125.43	119.33
3	A	302	NAG	O3-C3-C2	-2.23	104.85	109.47
5	A	304[A]	UFK	CBL-CBK-CBJ	2.21	122.78	120.50
5	A	304[A]	UFK	CBK-CBJ-CBI	-2.21	117.24	119.67
6	A	305	UFN	OAQ-CAH-CAG	-2.15	106.27	110.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	A	305	UFN	CCA-CCB-CBW	2.14	124.08	121.22
5	A	304[A]	UFK	CAI-CAJ-CAK	2.09	124.33	120.30
6	A	305	UFN	OCK-CBT-CBS	2.08	114.59	109.39
5	A	304[A]	UFK	CAT-CAU-CBB	2.07	123.21	119.45
6	A	305	UFN	OBD-CAX-CAS	-2.05	104.24	109.39
5	A	304[A]	UFK	CCB-CCA-CBZ	-2.04	118.40	120.50
5	A	304[A]	UFK	CBU-OBP-CBA	2.02	121.56	116.62
5	A	304[A]	UFK	CCH-CBR-CBQ	-2.02	114.78	116.66

There are no chirality outliers.

All (2) torsion outliers are listed below:

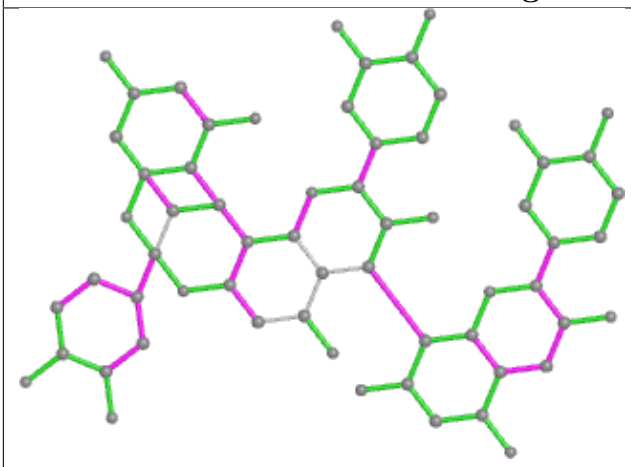
Mol	Chain	Res	Type	Atoms
5	A	304[A]	UFK	CAX-CAW-CBG-CBL
5	A	304[A]	UFK	CAX-CAW-CBG-CBH

There are no ring outliers.

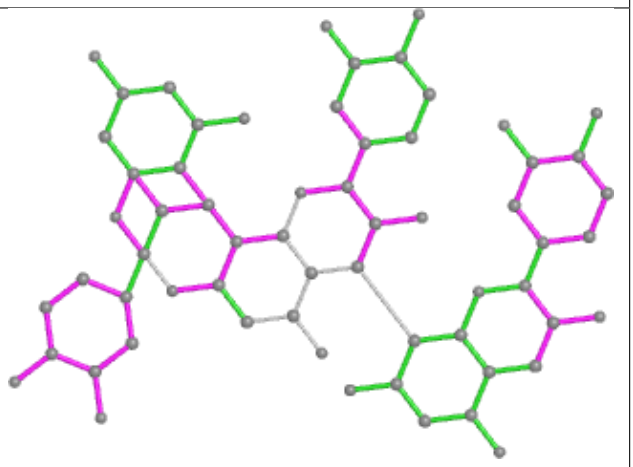
No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

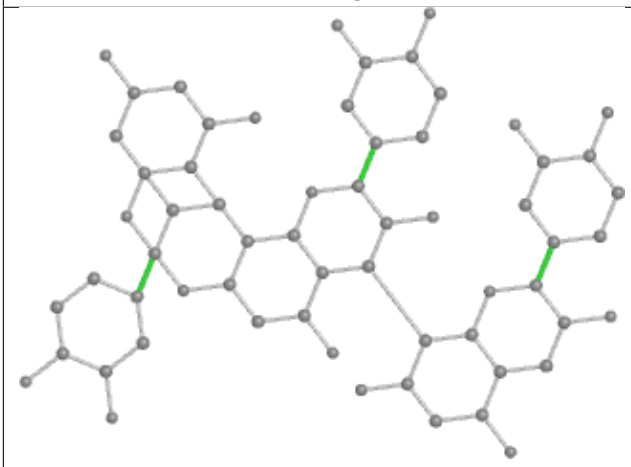
Ligand UFN A 305



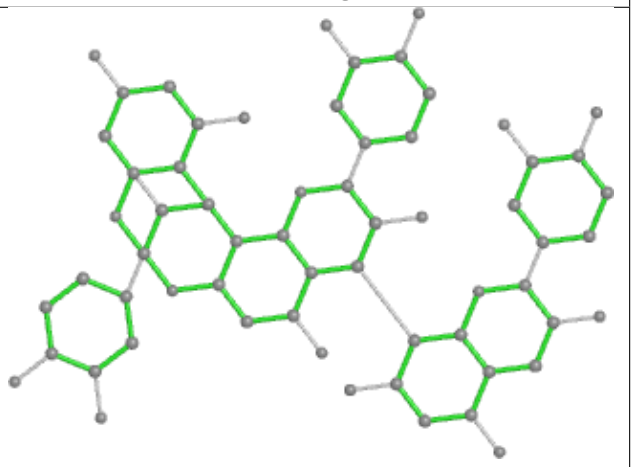
Bond lengths



Bond angles

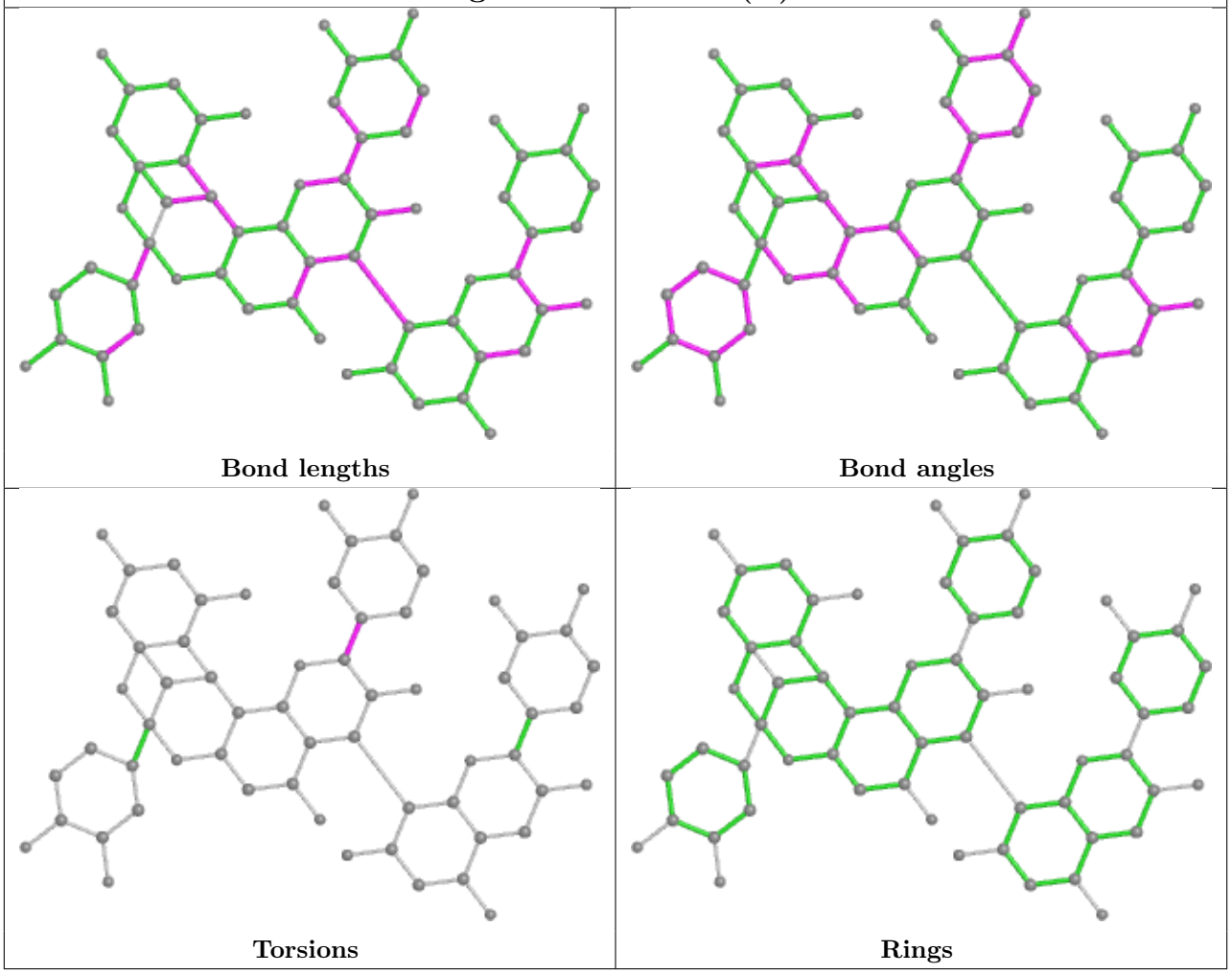


Torsions



Rings

Ligand UFK A 304 (A)



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
1	A	234/235 (99%)	0.28	7 (2%) 50 53	14, 19, 31, 46	0

All (7) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	108	VAL	4.3
1	A	110	ASN	3.6
1	A	109	THR	3.3
1	A	111	SER	3.0
1	A	203	TYR	2.8
1	A	208	THR	2.3
1	A	235	GLU	2.3

6.2 Non-standard residues in protein, DNA, RNA chains

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
1	HIC	A	1	11/12	0.93	0.09	16,17,21,27	0

6.3 Carbohydrates

There are no monosaccharides in this entry.

6.4 Ligands (i)

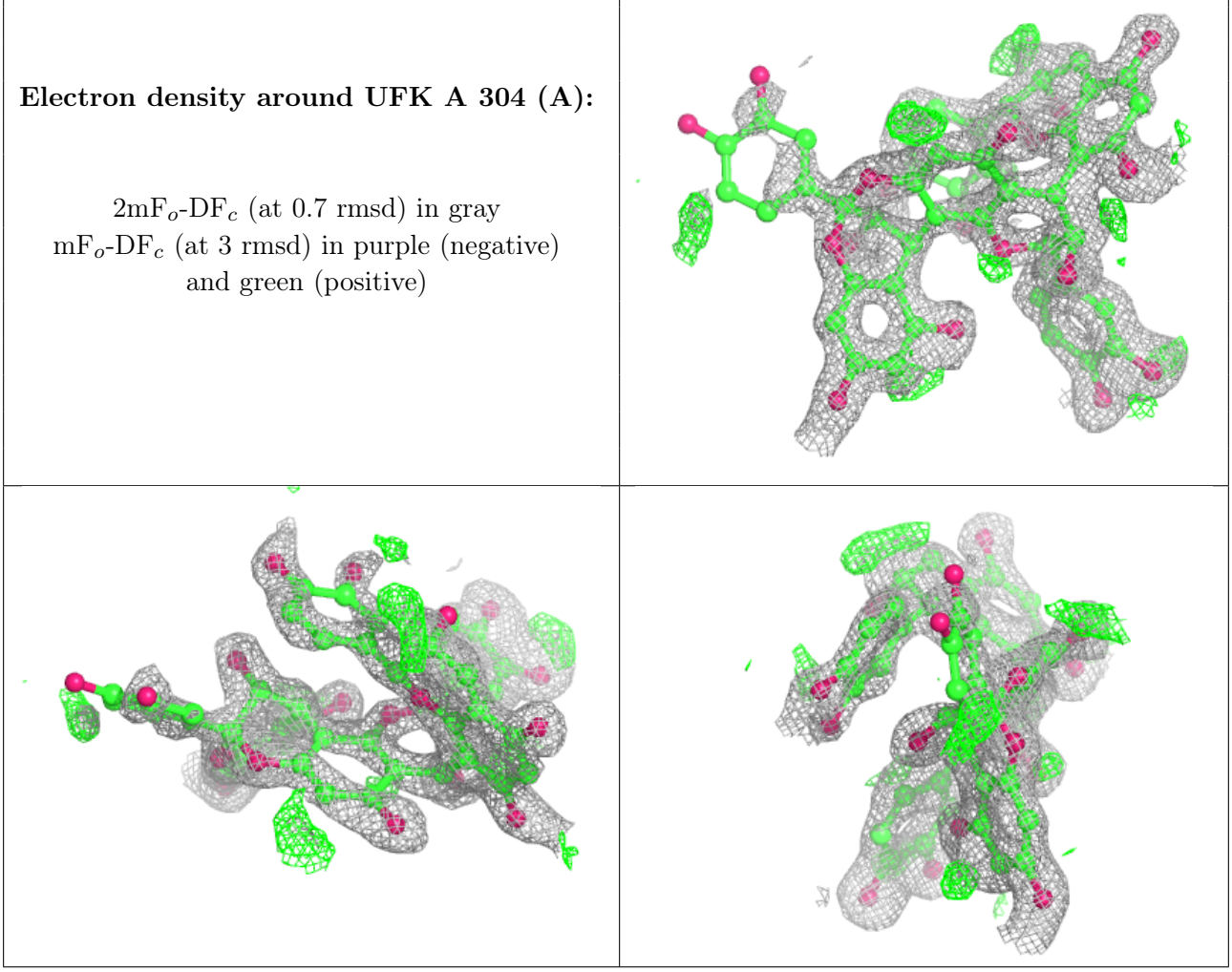
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	UFK	A	304[A]	63/63	0.67	0.21	22,29,52,67	63
3	NAG	A	302	14/15	0.80	0.16	26,32,40,40	0
6	UFN	A	305	63/63	0.81	0.20	24,31,49,57	0
4	ACT	A	303	4/4	0.88	0.16	26,27,39,45	0
7	CL	A	308	1/1	0.95	0.07	33,33,33,33	0
7	CL	A	307	1/1	0.98	0.07	23,23,23,23	0
7	CL	A	306	1/1	0.98	0.06	28,28,28,28	0
7	CL	A	309[A]	1/1	0.99	0.08	21,21,21,21	1
2	CU	A	301	1/1	1.00	0.04	18,18,18,18	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

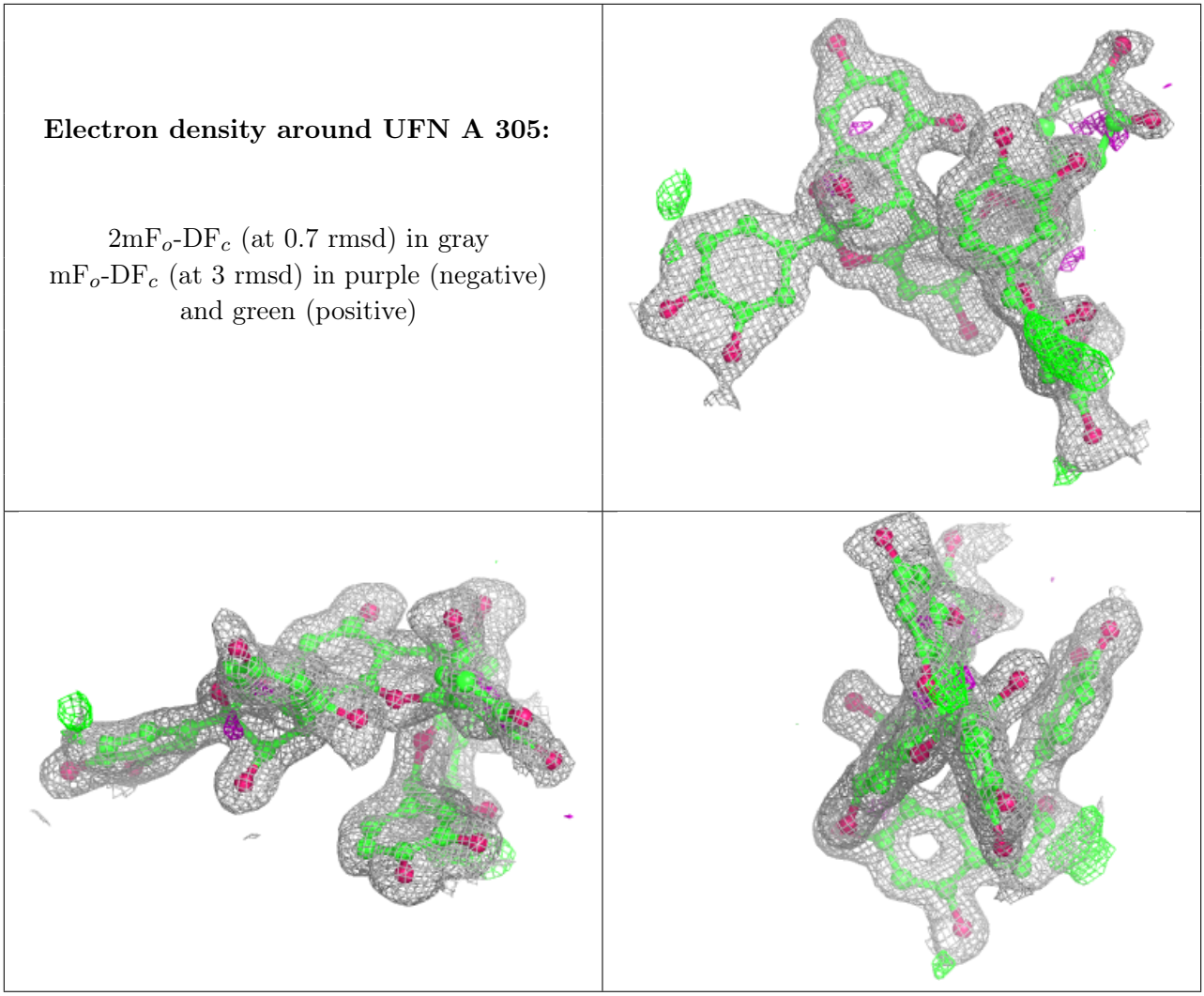
Electron density around UFK A 304 (A):

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around UFN A 305:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers

There are no such residues in this entry.